BULGAKOV, V.N.; KARPENKO, I.V.

Numerical solution of the uniform equation of a toroidal shell.
Sbor.trud.Lab.gidr.mash. no.9:89-93 '61. (MIRA 15:3)
(Elastic plates and shells)

BULGAKOV, V.N.

Design of toroidal compensators for axial loading and internal pressure. Sbor.trud.Lab.gidr.mash. no.9:94-102 '61. (MIRA 15:3)
(Pipe--Hydrodynamics)

BULGAKOV, Vadim Nikolayevich; FILIPPOV, A.P., otv. red.; LABINOV, S.D., nauchnyy red.; YEFIMOVA, M.I., tekhn. red.

[Statics of toroidal shells] Statika toroidal'nykh. Kiev, Izd-vo Akad. nauk USSR, 1962. 99 p. (MIRA 15:4)

1. Chlen-korrespondent Akademii nauk USSR (for Filippov).
(Elastic plates and shells)

L 07988-67 EWP(k)/EWT(d)/EWT(m)/EWP(w)/EWP(v) IJP(c) EM/JXT(CZ)
ACC NR: AT6014707 SOURCE CODE: UR/2731/58/000/007/0212/0216

AUTHOR: Bulgakov, V. N.

ORG: none

TITLE: Experimental investigation of stresses in a fast rotating toroidal shell

SOURCE: AN UkrSSR. Laboratoriya gidravlicheskikh mashin. Sbornik trudov, no. 7, 1958, 212-216

TOPIC TAGS: shell stress, toroidal shell, stress measurement, strain measurement, ROTATION

ABSTRACT: The experimental investigation of stresses in a fast rotating toroidal shell is discussed. The shell was machined from steel 5 (58-cm radius to torus center line, 45-cm radius torus), annealed and mounted in the experimental apparatus shown in Fig. 1. The shell was filled with shot (γ = 6 gm/cm^3), and tangential strains in two directions (at right angles) were measured at 10 locations on the outside of the shell using resistance strain gages. The data were reworked by the methods described by Ye. Yu. Nekhendzi (Rabota tenzometra v ploskom napryazhennom sostoyaniy, Zavodskaya laboratoriya, No. 8, 1952) and the stresses were calculated using

$$\left.\begin{aligned}\sigma_\alpha &= \frac{E}{1-\mu^2}(\varepsilon_\alpha + \mu\varepsilon_{\alpha+90^\circ})\\ \sigma_{\alpha+90^\circ} &= \frac{E}{1-\mu^2}(\varepsilon_{90^\circ+\alpha} + \mu\varepsilon_\alpha)\end{aligned}\right\}.$$

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ACC NR: AT6014707

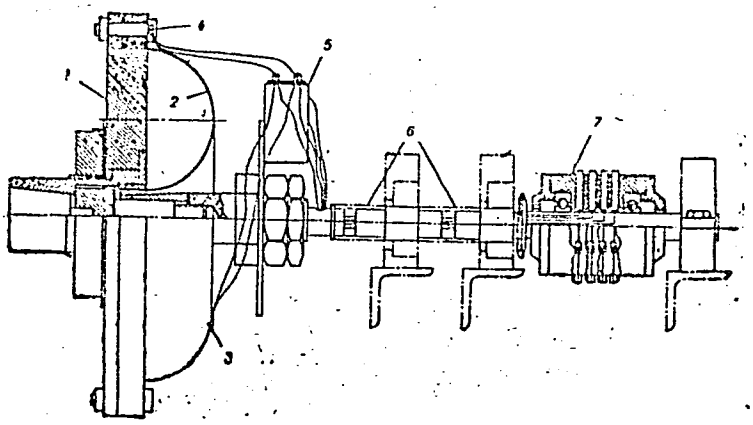

Fig. 1. Schematic diagram of experimental apparatus: 1 - shell mounting plate; 2 - shell; 3 - strain gage; 4 - compensating strain gage; 5 - panel with two fixed resistances; 6 - flexible couplings; 7 - slip rings

A sample curve of the stresses along a meridian of the shell is presented but the speed of the test is not given (test apparatus has capability to 2500 rpm). Orig. art. has: 2 formulas and 5 figures.

SUB CODE: 13/ SUBM DATE: 04Jun56/ ORIG REF: 004

Card 2/2

S/044/62/000/008/041/073
C111/C222

24.4200

AUTHOR: Bulgakov, V.N.

TITLE: The application of numerical methods to the calculation of a toroidal shell

PERIODICAL: Referativnyy zhurnal, Matematika, no. 8, 1962, 28, abstract 8V149. ("Tr. Konferentsii po teorii plastin i obolochek, 1960". Kazan', 1961, 41-45)

TEXT: The author considers the defining equation of a toroidal shell in the form of V.V. Novozhilov :

$$V'' - \frac{\alpha\cos\theta}{1+\alpha\sin\theta}V' + i\lambda\frac{\alpha\sin\theta}{1+\alpha\sin\theta}V = -\lambda\left(\lambda A + i\frac{pr_0}{2}\right)\frac{\alpha\cos\theta}{1+\alpha\sin\theta},$$

The solution is sought in the interval $-\frac{\pi}{2} \leq \theta \leq \frac{\pi}{2}$, $\alpha < 1$ and λ are real parameters ; primes mean the differentiation with respect to θ; $i = \sqrt{-1}$; $V = V_r + iV_i$; the right part corresponds to a stress by

Card 1/2

The application of numerical ... S/044/62/000/008/041/073
C111/C222

uniform internal pressure p. Formulas are given which express the stresses, moments and displacements in the shell by V and V'. The difference method and the method of Runge-Kutta is used for determining the solution. Numerical examples are given.

[Abstracter's note : Complete translation.]

Card 2/2

42050
S/731/61/000/009/002/005
I034/I234

AUTHOR: Bulgakov, V.N.

TITLE: Computation of axial load and internal pressure on torous expansion joints

SOURCE: Akademiya nauk Ukrains'koyi RSR. Laboratoriya gidravlicheskikh mashin. Sbornik trudov, no. 9, 1961. 94-102.

TEXT: A straight pipe-conduit is considered, of wall thickness subject to temperature t and pressure p. To compensate for the expansion of the pipe through heat, torous expansion joints are incorporated. A sketch of the pipe is given in figure 1 and shows the notations adopted. The geometrical parameters of the expansion joint are given as $\alpha = \frac{R_1}{R_0}$ $\chi = \frac{R_1}{j}$ and θ_1

Figure 2 shows the inner surface, assumed to be separate from the conduit. The interaction between the pipe and expansion joint is replaced by the forces $Q_{z1}(t)$ for temperature t, and $Q_{z1}(p)$ for uniform internal pressure p. The total reaction at point 1 is obviously the sum of the two forces, viz:

$$Q_{z1} = Q_{z1}(t) + Q_{z1}(p). \quad (1)$$

A method is given for computing these forces and for checking the strength of a
Card 1/3

Computation of...

S/731/61/000/09/002/005
I034/I234

given expansion joint. Results are tabulated for 7 different sets of geometrical parameters. A method follows for computing the pipe length ℓ whose temperature expansion can be taken up by the torous joint without exceeding the maximum permissible stresses in its walls. A numerical example is worked out. There are 5 figures and 1 table.

Card 2/3

Computation of...

S/731/61/000/009/002/005
I034/I234

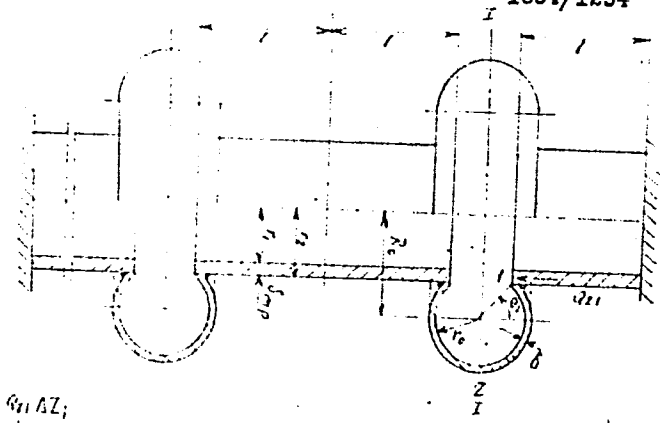

Fig 1

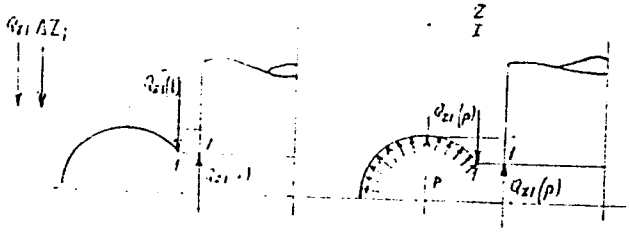

Fig 2

Card 3/3

BULGAKOV, V.N. (Khar'kov)

Solution of problem of thermoelasticity for shells of revolution with a complex shape. Izv. AN SSSR Mekh. i mashinostr. no.6:112-113 N-D '64. (MIRA 18:2)

Bulgakov, V.N.

PHASE I BOOK EXPLOITATION SOV/6206

Konferentsiya po teorii plastin i obolochek. Kazan', 1960.

Trudy Konferentsii po teorii plastin i obolochek, 24-29 oktyabrya 1960. (Transactions of the Conference on the Theory of Plates and Shells Held in Kazan', 24 to 29 October 1960). Kazan', [Izd-vo Kazanskogo gosudarstvennogo universiteta] 1961. 426 p. 1000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Kazanskiy filial. Kazanskiy gosudarstvennyy universitet im. V. I. Ul'yanova-Lenina.

Editorial Board: Kh. M. Mushtari, Editor; F. S. Isanbayeva, Secretary; N. A. Alumyae, V. V. Bolotin, A. S. Vol'mir, N. S. Ganiyev, A. L. Gol'denveyzer, N. A. Kil'chevskiy, M. S. Kornishin, A. I. Lur'ye, G. N. Savin, A. V. Sachenkov, I. V. Svirskiy, R. G. Surkin, and A. P. Filippov. Ed.: V. I. Aleksagin; Tech. Ed.: Yu. P. Semenov.

PURPOSE: The collection of articles is intended for scientists and engineers who are interested in the analysis of strength and stability of shells.

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75

Transactions of the Conference (Cont.) SOV/6206

COVERAGE: The book is a collection of articles delivered at the Conference on Plates and Shells held in Kazan' from 24 to 29 October 1960. The articles deal with the mathematical theory of plates and shells and its application to the solution, in both linear and nonlinear formulations, of problems of bending, static and dynamic stability, and vibration of regular and sandwich plates and shells of various shapes under various loadings in the elastic and plastic regions. Analysis is made of the behavior of plates and shells in fluids, and the effect of creep of the material is considered. A number of papers discuss problems associated with the development of effective mathematical methods for solving problems in the theory of shells. Some of the reports propose algorithms for the solution of problems with the aid of electronic computers. A total of one hundred reports and notes were presented and discussed during the conference. The reports are arranged alphabetically (Russian) by the author's name.

Card 2/14

Borovskiy, P. V. Application of the Method of Net to the Analysis of Parallelogram-Shaped Plates 33

Borodachev, N. M. Vibration of Circular and Annular Plates Under the Action of Cyclic Loading 37

Bulgakov, V. N. Application of Numerical Methods to the Analysis of a Toroidal Shell 41

Burmistrov, Ye. F. Bending of a Cylindrical Orthotropic Shell of Variable Thickness 46

Vallner, Kh. A. Determination of the Load-Carrying Capacity of Annular Rigid-Plastic Plates Under Small Deflections 53

Valov, G. M. Bending of a Thin Rectangular Cantilever Plate With Arbitrarily Distributed Transverse Loading 60

FILIPPOV, A.P., otv.red.; DEDUSENKO, Yu.M., red.; NAGORNAYA, N.K., red.; BULGAKOV, V.N., red.; SYTNIK, N.K., red.; SHALAYEVA, S.A., mlad. red.

[Operating processes in turbomachines and the stability of their elements] Rabochie protsessy v turbomashinakh i prochnost' ikh elementov. Kiev, Naukova dumka, 1965. 172 p. (MIRA 18:6)

1. Akademiya nauk URSR. Kiev. Instytut mekhanyky. Khar'kovskiy filial. 2. Chlen-korrespondent AN Ukr.SSR (for Filippov).

L 06575-67 EWT(m)/EWP(e)/EWP(t)/ETI IJP(c) AT/WH/JD/JG

ACC NR: AP6029816 (A) SOURCE CODE: UR/0363/66/002/008/1429/1433

AUTHOR: Meyerson, G. A.; Rakitskaya, Ye. M.; Bulgakov, V. N.; Ladygo, A. S. 31 B

ORG: Moscow Institute of Steel and Alloys (Moskovskiy institut stali i splavov)

TITLE: Investigation of the conditions for the preparation of niobium carbide and niobium carbonitride from niobium pentoxide

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 8, 1966, 1429-1433

TOPIC TAGS: niobium compound, carbide, nitride, nitrogen, ammonia

ABSTRACT: Preparation of NbC from Nb and NH_3 was studied at 1200°-1700°C for 1-8 hrs and the preparation of $NbN_{0.3}C_{0.7}$ from NbO_5,C, and N_2 and from NbO_5 and C in an NH_3 atmosphere was studied at 1000°-1700°C for 1-2 hrs. In general it was found that higher temperatures and longer reaction durations led to higher nitrogen content in the niobium carbide product. The experimental data as well as the thermodynamic calculations show that above 1620°C the NbC with less than 0.1% oxygen can be prepared from niobium oxide in an NH_3 atmosphere. The experimental data and the thermodynamic calculations also show that niobium carbonitride with as little as 0.01% oxygen content can be prepared from niobium oxide, carbon, and ammonia. In general, the formation of nitrides and carbonitrides in NH_3 atmosphere was faster than in the N_2 atmosphere. This is explained in terms of the high reactivity of nitrogen atoms readily generated

Card 1/2 UDC: 546.882'171.1+546.882'171.1'201

L 06575-67

ACC NR: AP6029816

on oxide surfaces by the dissociation of ammonia. Orig. art. has: 3 figures and 7 formulas.

SUB CODE: 07/ SUBM DATE: 13Oct65/ ORIG REF: 006/ OTH REF: 005

Card 2/2

15(2), 15(6) SOV/72-59-3-6/19

AUTHORS: Matveyev, M. A., Rabukhin, A. I., Chernyshev, V. V., Bulgakov, V. P.

TITLE: Utilization of Soluble Glass for the Exact Casting of Products From Silicate Melts (Primeneniye rastvorimogo stekla v tochnom lit'ye izdeliy iz silikatnykh rasplavov)

PERIODICAL: Steklo i keramika, 1959, Nr 3, pp 16 - 17 (USSR)

ABSTRACT: The manufacturing technology and the properties of "diopsidite" products originating from the masterskaya novykh stroitel'nykh materialov Upravleniya stroitel'stva Dvortsa Sovetov /nyne laboratoriya kamennogo lit'ya NII Zhelezobetona/(Workshop of New Building Materials of the "Soviet Palace" Building Administration (now: Laboratory for Cement Casting NII for Reinforced Concrete) have been already earlier described by S. I. Balashov, V. V. Chernyshev, A. Ya. Libman, S. E. Zgerskiy (Ref 1). This method makes it possible to obtain products of complicated shape and especially sculptures (Figs 1 and 2). Press molds of "diopsidite" are shown in figure 3. The table shows the accuracies of this exact casting procedure. The respective

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cast molds are prepared by means of ethyl orthosilicate, which is, however, rather scarce and is therefore expensive. The authors of the present paper have carried out experiments to replace ethyl orthosilicate for mass production by liquid glass. They were based upon the technology of mold production, that had been earlier worked out in the MKhTI imeni Mendeleyeva dlya lit'ya metallov (M. A. Matveyev, A. I. Rabukhin (MKhTI imeni Mendeleyev for Metal Casting)). The method employed for these experiments, which yielded good results, is accurately described. There are 3 figures and 1 table.

BULGAKOV, V.P., inzh.; MERTESHOV, M.N., inzh.

Production of refrigerating machinery in France; low refrigeration compressors. Khol. tekh. 38 no.4:61-64 Jl-Ag '61. (MIRA 15:1)
(France--Refrigeration and refrigerating machinery)

BULGAKOV, V.P., inzh.; MERTESHOV, M.N., inzh.

Refrigerating machinery manufacture in France; machines of medium and large refrigerating capacity. Khol. tekh. 38 no.5:69-72 S-O '61. (MIRA 15:1)

(France--Refrigeration and refrigerating machinery)

S/032/62/028/011/015/015
B104/B102

AUTHOR: Bulgakov, V. P., Chief, Central Plant Laboratory

TITLE: Scientific research work at the TsZL of the Kuybyshev Machine Building Plant

PERIODICAL: Zavodskaya laboratoriya, v. 28, no. 11, 1962, 1390 - 1391

TEXT: At the Tsentral'naya laboratoriya Kuybyshevskogo mashinostroitel'nogo zavoda (Central Laboratory of the Kuybyshev Machine Building Plant), more than thirty research studies a year are carried out, relating to the introduction of modern production processes, the elimination of rejects, and problems of automation. The following recent studies are mentioned: (1) Technology. A method was developed for the silver coating of parts with reversal of current, whereby the silver is deposited at a rate of 25 - 35 μ/hour which is 3 - 4 times as fast as by traditional methods. An oxyphosphate corrosion inhibitor was developed. Surfaces of parts to be spot-welded are etched with alkali solutions, and subsequently treated with chromium anhydride to improve the welding results. A chemical method of nickel plating was introduced, in which the binding of

nickel layers to the metal is improved by a heat treatment. (2) Control. A spectral method was developed for determining hydrogen in steels by using titanium alloys as standards. An automatic device for determining moisture in wood was designed. An ИМП-3 (IMP-3) pickup was developed for measuring small displacements, which allows accurate electronic determination of the yield point and elastic limit. A semiautomatic machine for determining the torsion in ten nuts simultaneously was constructed. A device for determining surface cracks by an eddy current method was developed. A special apparatus for the magnetic powder test of spheres was built.

ASSOCIATION: TsZL mashinostroitel'nogo zavoda (TsZL of the Machine Building Plant)

KAL'YUZHNAYA, K.M.; BULGAKOV, V.S.

Sectorial twinning of plagioclase in the endomorphism of basic rock in the Volhynian pegmatite field. Min.sbor. 18 no.2:195-198 '64. (MIRA 18:5)

1. Gosudarstvennyy universitet imeni Ivana Franko, L'vov i ekspeditsiya tresta nerudnogo teplovnoy promyshlennosti Kiyevskogo Soveta narodnogo khozyaystva.

BULGAKOV, V.S., kandidat tekhnicheskikh nauk.

Strength of reinforced concrete beams made of concrete hardening in cold weather. Stroi.prom. 32 no. 9:12-15 S '54. (MLRA 7:11)

1. TSentral'nyy nauchno-issledovatel'skiy institut promyshlennykh sooruzheniy.
(Concrete construction--Cold weather conditions)

SOV/97-58-10-15/17

AUTHORS: Vasil'yev, A.P. and Bulgakov, V.S. (Candidates of Technical Sciences), and Matkov, N.G. (Engineer)

TITLE: Injecting of Hollows in Precast Prestressed Reinforced Concrete Constructions (In"yektsiya kanalov v predvaritel'no napryazhennykh konstruktsiyakh)

PERIODICAL: Beton i zhelezobeton, 1958, Nr 10, pp 396-397 (USSR)

ABSTRACT: Tests were carried out in the Laboratory for Precast-Monolithic Reinforced Concrete of the Institute for Concrete and Reinforced Concrete (Laboratoriya sbornogo i sborno-monolitnogo zhelezobetona Instituta betona i zhelezobetona) ASiA SSSR on the injection of hollows of precast prestressed reinforced concrete constructions with cement and cement-sand grouts. The proper grouting of hollows has a considerable influence on the construction, otherwise corrosion of reinforcement is likely to occur, especially in the case of batch reinforcement (5 mm diameter) made from high-tensile steel. Also longitudinal cracks are likely to appear during freezing of the oozing out water). To achieve proper injecting of hollows the right composition of grout and correct mixing are necessary. Fig 1 shows a

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SOV/97-58-10-15/17

Injecting of Hollows in Precast Prestressed Reinforced Concrete Constructions

special machine for the investigation of injection of hollows in prestressed constructions. Tests for compression, strength, hydration and shrinkage were carried out on hollows 30 m long filled in with 'pleksiglass' and concrete with inside batches of reinforcement. On the basis of these experiments it is recommended to use the following grouts (by weight): 1 : 0.35 and 1 : 0.4 (portland cement + water); 1 : 0.35 + plastifying additive (portland cement + water + 0.15% by weight of cement of residual distillate of sulphate-alcohol, or 0.1% soapnaphta); 1 : 0.25 : 0.45 (portland cement + ground sand or sand with grain up to 0.5 mm + water). These grouts have satisfactory "mobility", minimal hydration, small shrinkage, strength of not less than 200 kg/cm^2 after 7 days, satisfactory frost-resistance, and are suitable for injection into hollows 30 m or more long. The addition of plasticator makes the injection of grout much easier, and therefore

Card 2/3

it is possible to reduce the pressure during injection. Fig 2 shows cross-section of grouted hollow with properly filled void.
There are 2 figures.

BERDICHEVSKIY, G.I., kand.tekhn.nauk; DMITRIYEV, S.A., kand.tekhn.nauk; MIKHAYLOV, K.V., kand.tekhn.nauk; GVOZDEV, A.A., prof., doktor tekhn.nauk; MIKHAYLOV, V.V., prof., doktor tekhn.nauk; BULGAKOV, V.S., kand.tekhn.nauk; VASIL'YEV, A.P., kand.tekhn.nauk; YEVGEN'YEV, I.Ye., kand.tekhn.nauk; MULIN, N.M., kand.tekhn.nauk; SVETOV, A.A., kand.tekhn.nauk; FRENKEL', I.M., kand.tekhn.nauk; BELOBROV, I.K., inzh.; MATKOV, N.G., inzh.; MITNIK, G.S., inzh.; SKLYAR, B.L., inzh.; SHILOV, Ye.V., inzh.; MASENKO, I.D., inzh.; NIZHNICHENKO, I.P., inzh.; FILIPPOVA, G.P., inzh.; MIZERNYUK, B.N., kand.tekhn.nauk; SHEYNFEL'D, N.M., kand.tekhn.nauk; BALAT'YEV, P.K., kand.tekhn.nauk; BARBARASH, I.P., kand.tekhn.nauk; MITGARTS, L.B., kand.tekhn.nauk; SHIFRIN, M.A., kand.tekhn.nauk; PETROVA, V.V., red.izd-va; TEMKINA, Ye.L., tekhn.red.

[Temporary instruction on the technology of making prestressed reinforced concrete construction elements] Vremennaia instruktsiia po tekhnologii izgotovleniia predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Gos.izd-vo lit-ry po stroit., arkhit. i stroit.materialam, 1959. 255 p. (MIRA 12:12)

(Continued on next card)

BERDICHEVSKIY, G.I.---(continued) Card 2.

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo. 2. Nauchno-issledovatel'skiy institut betona i zhelezobetona Akademii stroitel'stva i arkhitektury SSSR (for Gvozdev, V.V.Mikhaylov, Berdichevskiy, Bulgakov, Vasil'yev, Dmitriyev, Yevgen'yev, K.V.Mikhaylov, Mulin, Svetov, Frenkel', Belobrov, Matkov, Mitnik, Sklyar, Shilov). 3. Nauchno-issledovatel'skiy institut organizatsii, mekhanizatsii i tekhpomoshchi Akademii stroitel'stva i arkhitektury SSSR (for Masenko, Nizhnichenko, Filippova, Mizernyuk, Sheynfel'd). 4. Nauchno-issledovatel'skiy institut Glavmospromstroymaterialov (for Balat'yev, Barbarash). 5. Nauchno-issledovatel'skiy institut po stroitel'stvu Minstroya RSFSR (for Mitgarts, Shifrin). 6. Deyatvitel'nyye chleny Akademii stroitel'stva i arkhitektury SSSR (for Gvozdev, V.V.Mikhaylov).

(Prestressed concrete)

BULGAKOV, V.S., kand.tekhn.nauk; SHISHKIN, R.G., inzh.

New types of joints of prestressed concrete construction elements. Bet.i zhel.-bet. no.12:553-557 D '60. (MIRA 13:11)
(Prestressed concrete construction)

BULGAKOV, V.S., kand.tekhn.nauk

Experimental testing of the bearing capacity of centrally and eccentrically compressed triangular reinforced concrete columns. Trudy NIIZHB no. 17:146-153 '60. (MIRA 14:4)
(Columns, Concrete)

BULGAKOV, V.S., kand.tekhn.nauk

Effect of scale on the bearing capacity and deformation of eccentrically compressed reinforced concrete elements with a rectangular cross section. Trudy NIIZHB no.23:196-206 '61. (MIRA 14:12)

(Columns, Concrete)

BULGAKOV, V.S., kand. tekhn. nauk; MATKOV, N.G., kand. tekhn. nauk; BELIKOV, V.A., inzh.; VASIL', A.P., kand. tekhn. nauk, red.; KLIMOVA, G.D., red. izd-va; SHEVCHENKO, T.N., tekhn. red.

[Handbook on injecting the channels in prestressed concrete elements with mortar]Rukovodstvo po in"etsirovaniiu kanalov predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Gosstroiizdat, 1962. 28 p. (MIRA 15:9)

1. Akademiya stroitel'stva i arkhitektury SSSR. Institut betona i zhelezobetona, Perovo.

(Prestressed concrete)

VASIL'YEV, A.P., kand.tekhn.nauk; BULGAKOV, V.S., kand.tekhn.nauk;
MATKOV, N.G., kand.tekhn.nauk

Quality grouting of precast prestressed concrete elements. Bet.
i zhel.-bet. 9 no.2:53-59 F '63. (MIRA 16:5)
(Prestressed concrete)

MATKOV, N.G., inzh.; VASIL'YEV, A.P., kand. tekhn. nauk;
BULGAKOV, V.S., kand. tekhn.nauk, red.

[Experimental study of the freezing of injection mortars and their adhesion to reinforcement in ducts of prestressed reinforced concrete elements] Eksperimental'noe issledovanie zamorazhivaniia in"ektsionnykh rastvorov i ikh stsepleniia s armaturoi v kanalakh predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Nauchno-issl. in-t betona i zhelezobetona, 1963. 36 p. (MIRA 17:9)

VASIL'YEV, A.P., doktor tekhn. nauk; BULGAKOV, V.S., kand. tekhn. nauk; MATKOV, N.G., kand. tekhn. nauk

[Grouting of ducts of prestressed concrete elements] In"etsirovanie kanalov predvaritel'no napriazhennykh zhelezobetonnykh konstruktsii. Moskva, Stroiizdat, 1964. 245 p. (MIRA 18:3)

BABAKOV, N.; BULGAKOV, V.

Modernization of temperature control devices. Radio no.10:27 O '63. (MIRA 16:11)

BULGAKOV, V.V., inzhener.

Dependance of the amount of labor spent for boiler installation upon the block system of construction. Elek.sta. 25 no.12:19-21 D '54. (MLRA 7:12)
(Steam boilers)

BULGAKOV, V. V.

"The Applied Theory of Gyroscopes." Moscow, 1955.

Eval. B-3,110,928, 21 August 1958

BULGAKOV, V.V., inzh.

Concerning a craneless method using hydraulic lifts for installing generator stators with a weight up to 240 tons. Elek.sta. 32 no.6:39-42 Je '61. (MIRA 14:8)
(Turbogenerators) (Hydraulic jacks)

BULGAKOV, V.V., inzh.

Mechanization of power plant machinery repair operations.
Energomashinostroenie 9 no.2:36-37 F '63. (MIRA 16:3)
(Electric power plants)
(Electric machinery--Maintenance and repair)

BULGAKOV, V.V., inzh.

Concerning the mechanization of repair operations. Elek. sta. 32 no.1:20-21 Ja '61. (MIRA 16:7)

(Electric power plants—Maintenance and repair)

BULGAKOV, V.Ya.; LOPATIN, Yu.T.

Increasing the stability of dimensionsand engineering properties of parts made of polyamides. Mashinostroitel' no.1:32-33 Ja '63. (MIRA 16:2)

(Amides)

BULGAKOV, V.Ya., inzh.; LOPATIN, Yu.T., inzh.

Investigating moisture absorption of polyamides. Vest. mashinostr. 44 no.9:50-52 S '64. (MIRA 17:11)

L 13810-66 EWT(m)/EWP(j)/T/ETC(m) WW/RM

ACC NR: AP6002489 (N) SOURCE CODE: UR/0191/66/000/001/0069/0070

AUTHORS: Bulgakov, V. Ya.; Lopatin, Yu. T.

ORG: none

TITLE: Waterproofing of textolites with polyorganosiloxanes

SOURCE: Plasticheskiye massy, no. 1, 1966, 69-70

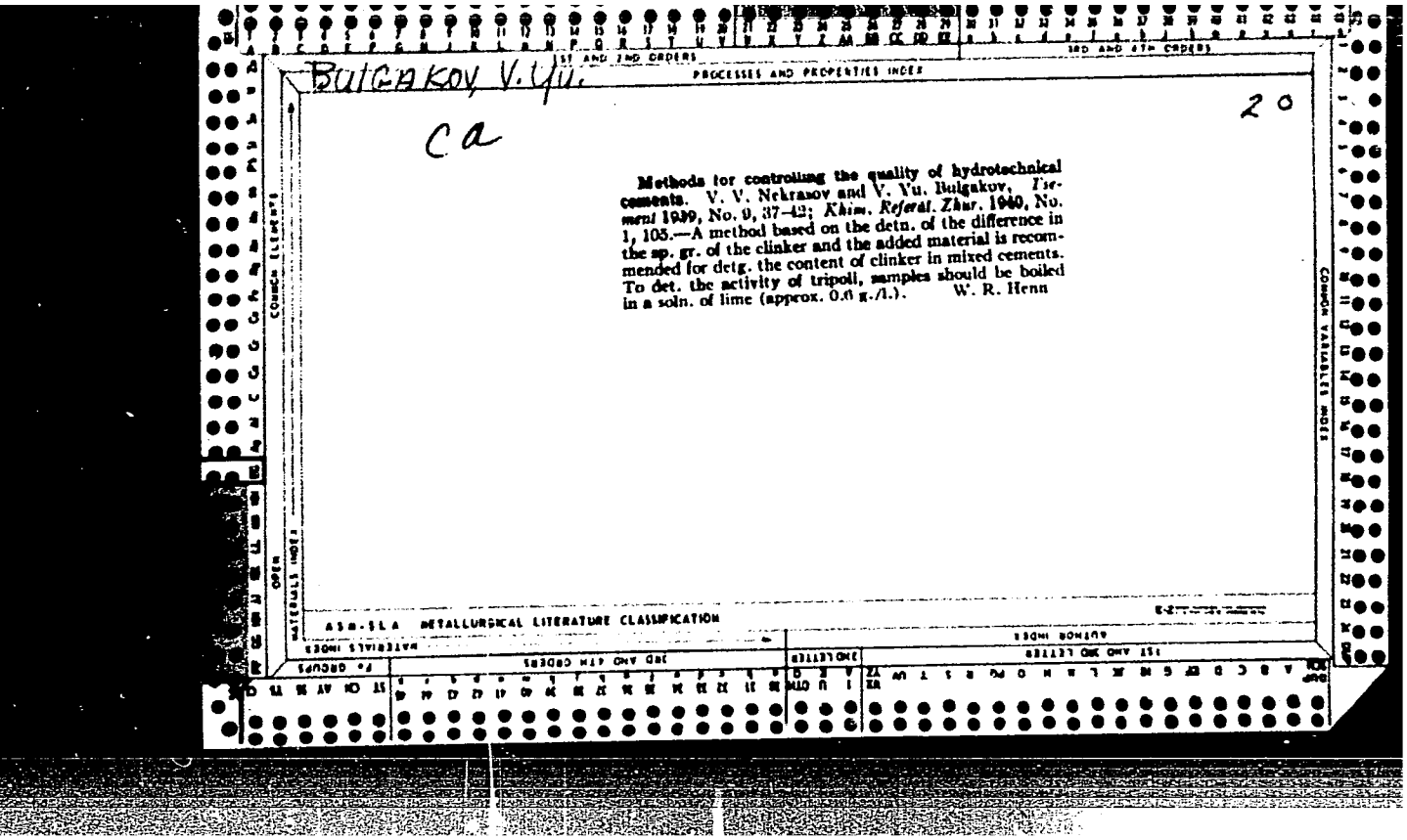
TOPIC TAGS: organosilicone compound, polysiloxane / TU MKhP 2416 52 polyorganosiloxane, GKZh 94 polyorganosiloxane, PTK textolite, PT textolite, PT-1 textolite

ABSTRACT: The effect of waterproofing textolites PTK, PT and PT-1 (GOST 5-52) with polyorganosiloxane fluids TU MKhP 2416-54 (I) and GKZh-94 (II) has been investigated. The work was undertaken to minimize swelling of the machine parts made of textolites, occurring even on brief contact with hot water, live steam, and solutions of hydrochloric or sulfuric acids. The treatment consisted of boiling the samples of textolite for 6 hours in distilled water, drying for 30—40 min at 50—60C and saturating with I or II at 100C for 24 hours. It was established that treatment with I reduced absorption of moisture ~ 8—9 times, while treatment with II reduced it 10 times as compared with untreated controls. Samples treated with I showed higher chemical resistance, improved dielectric properties, and better specific volumetric electrical resistivity. Experimental results were worked out by N. I. Nadareyshvili. Orig. art. has: 3 tables.

SUB CODE: 11 SUBM DATE: none

UDC: 678.06—011.84

Card 1/1



Bulgakov, V. Yu.

Ca

20

PROCESSES AND PROPERTIES INDEX

Methods for controlling the quality of hydrotechnical cements. V. V. Nekrasov and V. Yu. Bulgakov, *Tsement* 1939, No. 9, 37–42; *Khim. Referat. Zhur.* 1940, No. 1, 105.—A method based on the detn. of the difference in the sp. gr. of the clinker and the added material is recommended for detg. the content of clinker in mixed cements. To det. the activity of tripoli, samples should be boiled in a soln. of lime (approx. 0.6 g./l.). W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

BULGAKOV, Ye., karbyuratorshchik-regulirovshchik

Our experience in fuel saving. Avt. transp. 37 no.5:22 My '59. (MIRA 12:8)

1.Taganrogskiy gruzovoy avtokolonny No.123.
(Automobiles--Engines--Carburetors)

BULGAKOV, Ye.I., gornyy inzhener.

Reducing the cost of ore extraction in lode mining. Gor.zhur. no.6:9-12 Je '57. (MLRA 10:8)
(Gold mining and mining--Costs)

BULGAKOV, Ye.I.; KRYLOVA, M.I.; BOZHENKOV, A.P.

Economic substatiation of the efficient length of a longwall by the method of comparing variants. Nauch. trudy KNIUI no.[illegible] '64. (MIRA 18:4)

BULGAKOV, Ye.N.

Retaining wall made of precast reinforced concrete. Prom. stroi. 39 no.7:54-55 '61. (MIRA 14:7)
(Retaining walls) (Precast concrete construction)

BULGAKOV, E. S.

"The crumbling of finished cement blocks in the outside walls of a building," Construction Industry, 1952.

BULGAKOV, Ye.S.

Ammonia water as an antifreeze additive for plaster. Rats. i izobr. predl. v stroi. no.137:36-37 '56. (MLRA 9:9)
(Plaster) (Ammonium hydroxide)

YATSKOVSKIY, S.; KLIMOV, L., inzh.; ANTIPENKO, I., inzh.; TEGEL', F., starshiy prepodavatel'; BELEVANTSEV, I., komandir samoleta (Maykop); LYSENKO, A.; BUZENKOV, S.; BULGAKOV, Yu.

Technological innovations. Grazhd. av. 22 no.7:22-24 Jl '65. (MIRA 18:7)

1. "Kryl'ya Sovetov" (for Yatskovskiy). 2. Krivorozhskoye aviatsionnoye uchilishche (for Tegel').

SOV/169-59-2-1235

Translation from: Referativnyy zhurnal, Geofizika, 1959, Nr 2, p 32 (USSR)

AUTHOR: Bulgakov, Yu.I.

TITLE: An Apparatus for Measuring Alternating Electric Fields of Low Frequencies in Electric Prospecting

PERIODICAL: Uch. zap. LGU, Nr 249, pp 71 - 79 - 1958

ABSTRACT: The description of a set of apparatus for electric prospecting by alternating current is given. A generator unit switches on a synchronous alternator with a frequency of 20 cps coupled with an electromotor excited by an accumulator battery. The power of the generator amounts to 60 - 70 watt at a voltage of 150 v. The receiving apparatus is employed for measuring the magnitude of the voltage and the phase shift between two voltages. The apparatus consists of a valve millivoltmeter with the measuring range from 0 to 1,000 mv and with the input resistance amounting to 4 Mohm. The circuit of the millivoltmeter comprises three RC-amplifiers tuned in for the frequencies of 19, 22 and 25 cps. Owing to the application of special filters, the frequency of 50 cps is suppressed relatively to the frequency of 20 cps by a factor of 90,000 - 100,000 times. The constancy of

Card 1/2

An Apparatus for Measuring Alternating Electric Fields of Low Frequencies in Electric Prospecting

SOV/169-59-2-1235

the amplification factor is controlled by a calibration device. The apparatus has been applied to the deposits of the Pudnyy Altai for operation by the methods of dipole, combined and symmetrical profiling, dipole probing, and the method of the charged body.

L.L. Van'yan

Card 2/2

L 33251-66 EWT(1) GW

ACC NR: AT6012784 (N) SOURCE CODE: UR/3175/66/000/027/0023/0042

34
B+R

AUTHOR: Bulgakov, Yu.I.; Velikin, A.B.

ORG: VITR

TITLE: Transient processes method in the electric inductive prospecting with common transmitter and receiver

SOURCE: USSR. Gosudarstvennyy geologicheskiy komitet. Osobore konstruktorskoye byuro. Geofizicheskaya apparatura, no. 27, 1966, 23-42

TOPIC TAGS: mining engineering, prospecting, geophysic instrument

ABSTRACT: This paper presents the apparatus, methodology and results of prospecting with an inductive type prospecting system. The system comprises multiconductor cable loops, controllable DC power supply with pulsing capabilities, and appropriate sensors and recorders. The loops, which can be selected for dimensions between 5 x 5 m and 200 x 200 m, serve both as transmitters of the magnetic field pulse and receivers of the transient return signal of the currents decaying in the conductive bodies. By repeating the trammitted pulses at each ground profile station (e.g. up to 100 times), and recording the cumulative received voltage signal with a capacitive circuit, the sensitivity and fidelity of the system are improved, the latter due to substantial cancellation and attenuation of spurious signals and noise. Graphs of signal returns,

Card 1/2

L 33251-66
ACC NR: AT6012784

in form of the ratio received voltage /transmitted current amperage as a function of time - e(t)/I; and graphs of returns plotted over the prospected ground line, are shown over various known deposits, for various sizes of the exploring loops and for various current pulse durations. Special tests showed an adequate data repeatability. Fig. 1 shows a record of the voltage/current ratio over a section of the ground line.

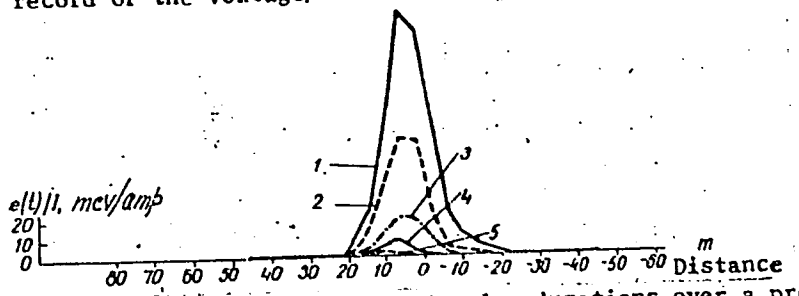


Fig. 1. Graph of e(t)/I for various current pulse durations over a profile (meters) at Kumus-Tyube for a 40x40 m loop. 1 - T=.8 millisec.; 2 - 1.25 msec; 3 - 2.0 msec. 4 - 3.2 msec; 5 - 4.0 msec.

The developed methodology and instrumentation permit the locating of highly conductive mineral bodies at depths of up to 100 meters, with practical absence of anomalies due to soft deposits, tectonics or relief. Orig. art. has 12 figures.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 009/ OTHE REF: 001

Card 2/2

BULGAKOV, Yu.I.; VESHEV, A.V.; LARIONOV, L.V.

Bridge type instruments used in measuring magnetic susceptibility of rocks and ores. Uch. zap. LGU no.278:136-142 '59. (MIRA 13:2)

(Magnetic instruments) (Rocks--Magnetic properties)

BULGAKOV, Yu.I.; VESHEV, A.V.

Use of low-frequency alternating current in electric profiling and sounding. Uch.zap.LGU no.303:187-192 '62. (MIRA 15:11)
(Electric prospecting)

STURMAN, A.V., veter. vrach (Strashenskiy rayon, Moldavskaya SSR); BULGAKOV, Yu.N., veter. fel'dsher (Strashenskiy rayon, Moldavskaya SSR); KAL'NITSKIY, P.I., veter. vrach (Strashenskiy rayon, Moldavskaya SSR); OCHAKOVSKIY, Z.M., veter. vrach (Strashenskiy rayon, Moldavskaya SSR); GOTSENOGA, A.D. (Strashenskiy rayon, Moldavskoy SSR); ABRAMYAN, G.I., veter. vrach; MEKHTIYEV, M.G., veter. fel'dsher (s.Shirozlu, Vedinskogo rayona Armyanskoy SSR); KIRAKOSYAN, A.A., veter. vrach; GEORGIYEV, Yu.P., veter. vrach; LOMAKIN, A.M., nauchnyy sotrudnik; SHEPELEV, L.A., veter. vrach.; TARASOV, I.I., assistent; ROMASHKIN, V.M., veter. tekhnik; ANDRIYAN, Ye.A.; BARTENEV, V.S.; KOROL', Ye.I., veter. tekhnik; YEROSHENKO, A.K., aspirant; BANZEN, Ya.P.; SARAYKIN, I.M., prof.; ZHEVAGIN, A.N., veter. vrach; BUT'YANOV, D.D., veter. vrach (Klimovichskiy rayon, Mogilevskoy oblasti BSSR); SHALYGIN, B.V., veter. vrach (Klimovichskiy rayon, Mogilevskoy oblasti, BSSR); RYABOKON, G.T., veter. fel'dsher; MOVSUMZADE, K.K., prof.; DUGIN, G.L., aspirant; TITOV, G.I., nauchnyy sotrudnik; MEDVEDEV, I.G., veter. vrach.; ALIKAYEV, V.A.; ALIENOV, O.A., veter.vrach.

Prophylaxis and treatment of noninfectious diseases in calves and piglets. Veterinariia 40 no.2:40-47 F '63. (MIRA 17:2)

1. Ul'yanovskaya oblastnaya veterinarno-bakteriologicheskaya laboratoriya (for Sturman). 2. Kolkhoz imeni Kirova, Volokonovskogo

(Continued on next card)

S/056/61/041/006/052/054
B111/B104

AUTHOR: Bulgakov, Yu. V

TITLE: On the occasion of an article by N. V. Pleshivtsev, "Atomization of copper by hydrogen ions with energies of up to 50 kev"

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 6, 1961, 2015 - 2016

TEXT: In the article by N. V. Pleshivtsev (Ref. 1: ZhETF, 37, 1233, 1959) the measurement results indicated between 10 kev and 10 Mev differ clearly from those yielded by similar experiments, and also deviate from the theory (Ref. 5) which was refuted by Pleshivtsev. In the present paper, this discrepancy is explained by the different composition of the ionic current. The ratio of the atomization factor S(E) of an ionic current with H^+, H_2^+, H_3^+ components to the correct value $S_{H^+}(E)$ for a pure H^+ current is estimated. In the case of $E_{H^+} \gg 500$ ev, agreement with the theory by Goldman and Simon is obtained. Under the most unfavorable conditions ($n_{H^+} = 20\%$, $n_{H_2^+} = 50\%$, $n_{H_3^+} = 30\%$), $S(E)/S_{H^+}(E) \sim 4$ holds. The total atom-

Card 1/2

On the occasion of an article by ...

ization factor of N_2^+ and O_2^+ is about 0.25 atoms/ion. The method applied by Pleshivtsev is said to be defective to such a degree that his conclusions as to the correctness of the theory of Goldman and Simon lack any foundation. There are 8 references: 2 Soviet and 6 non-Soviet. The three most recent references to English-language publications read as follows: Ref.5: D. T. Goldman, A. Simon, Phys. Rev., 111, 383, 1958; W. E. Moore, Ann. N. Y. Ac. Sci., 67, 600, 1957; J. Chem. Phys., 32, 1540, 1960; O. C. Yonst, J. Appl. Phys., 3, 447, 1960.

ASSOCIATION: Fiziko-khimicheskiy institut im. L. Ya. Karpova (Physico-chemical Institute imeni L. Ya. Karpov)

SUBMITTED: January 9, 1961 (initially)
July 24, 1961 (after revision)

S/057/63/033/004/021/021
B117/B238

AUTHOR: Bulgakov, Yu. V.

TITLE: Theory of metal atomization with light ions

PERIODICAL: Zhurnal tekhnicheskoy fiziki, v. 33, no. 4, 1963, 500-504

TEXT: It was shown that though the qualitative description of the atomization of metals by light ions in terms of existing theories is correct, the quantitative results are not confirmed experimentally. It was suggested that the surface layer of the metal atoms should be taken into account to eliminate the divergence. It was shown that the atomization coefficient can be represented as the product of the production probability of a sufficiently fast primary particle and the probability of its colliding with a metal atom in the region of the first layer. Assuming that the primary collision is a Rutherford collision, the following expression was derived:

$$S=4\pi a_0^2\left(\frac{\rho N_0}{A_2}\right)^{1/3}\frac{A_1}{A_2}\frac{Z_1^2Z_2^2}{E_H E_0}E_{H_y}^2\left\{1-\exp\left[-\left(\frac{\rho N_0}{A_2}\right)^{1/3}\left(\frac{4A_1E_0}{EA_2}\right)^{1/3}\sigma_s\right]\right\}, \quad (8)$$

Card 1/2

Theory of metal atomization with ...

E_{Ry} = 13.5 ev is the Rydberg constant, A_1 and A_2 are the atomic weights of the incident ion and the metal, and N_o is the Avogadro number. This result can be applied when $E_o \gg 2E_{Ry}Z_1Z_2^{1/3}$, but on transition to higher energies a result which is obviously underevaluated holds. This might be related to the possibility of particles displaced from the surface multiplying. Comparing the results from equation (8) with experimental values shows that they converge when the approximation conditions are improved. On the basis of the calculations carried out it was shown that the atomization of metal with light ions is basically determined by the atoms in the surface layer. This relationship can apparently be extended to heavy ions and low energies. The rate of atomization therefore depends on the state of the atoms in the surface layer. This makes it possible to explain the effect of sorbed films on the atomization coefficient. There are 3 figures.

SUBMITTED: April 7, 1962

Card 2/2

BULGAKOV, Yu.V.

Theory of sputtering of metals by light ions. Zhur. tekh. fiz. 33 no.4:500-504 Ap '63. (MIRA 16:9)
(Sputtering (Physics)) (Ions)

KRASNOVSKIY, B.S., [illegible]

Machine for lapping equipment. [illegible]

S/0181/64/006/004/1182/1185

ACCESSION NR: AP4028449

AUTHOR: Bulgakov, Yu. V.

TITLE: Defects introduced into a crystal by ionic bombardment and the Wener effect

SOURCE: Fizika tverdogo tela, v. 6, no. 4, 1964, 1182-1185

TOPIC TAGS: crystal defect, Wener effect, ionic bombardment, emission direction

ABSTRACT: The author investigated the influence of defects in a crystal lattice on the angular distribution of atoms emitted by a single crystal during sputtering. He found that the directivity of emergence is rather sharp even when the collision of defects reduces the free path of focusons near the surface to only six or seven times the value of the lattice constant. Computations of energies of the emitted atoms indicate that the effect of directional emission of the atoms is explained within the framework of the correlated-collision theory, even when defects introduced into the crystal by an ionic beam are taken into account. In determining the thickness of the layer from which the sputtered particles come, the presence of defects must be considered because, since they are abundant in the surface layers of metals, they may restrict the range of focusons. "The author thanks V.

Card 1/2

L 11645-66 EWT(l)/EWT(m)/EWP(c)/EWP(v)/T/EWP(t)/EWP(k)/EWP(h)/EWP(b)/EWP(l)/EWA(h)/
EWA(c)/ETC(m) LJP(c) JD/WW/HM/GG

ACC NR: AP6001595 SOURCE CODE: UR/0120/65/000/006/0205/0206

AUTHOR: Nikolayenko, O. K.; Bulgakov, Yu. V.; Tikhomirov, M. V.

ORG: Scientific-Research Physicochemical Institute, Moscow (Nauchno-issledovatel'skiy fiziko-khimicheskiy institut)

TITLE: A simple pump for obtaining an ultrahigh vacuum

SOURCE: Pribory i tekhnika eksperimenta, no. 6, 1965, 205-206

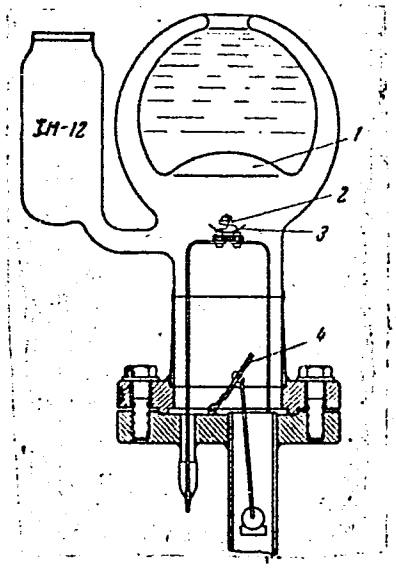
TOPIC TAGS: high vacuum pump, vacuum technique

ABSTRACT: A titanium nitrate pump is described. It is made of glass and was designed for obtaining an ultrahigh vacuum of about 10^{-9} tor in a small limited space. The operation of the pump is based on the abnormal sorption of gases evaporated by titanium at temperatures lower than -170 C. A glass vacuum envelope with an interposed Kovar alloy connection was soldered to a flange made of stainless steel. A cross section of the pump is shown in Fig. 1. A ball-shaped surface (1) covered by a titanium film and cooled by liquid nitrogen (oxygen) serves as a pumping element. The electrically heated spiral (2) made of 0.7 mm molybdenum wire with a titanium coating is used as a titanium evaporator. The screen (3) prevents the discharge of titanium into

Card 1/2 UDC: 621.528

L 11645-66

ACC NR: AP6001595



the vacuum. The valve (4) separates the glass envelope from the other part of the vacuum system. The operation of the pump is briefly explained. The pump can operate during 100 hours without replacing the spiral. The consumption of liquid nitrogen was one liter per hour. Orig. art. has: 1 figure. [22]

Fig. 1. Ultrahigh-vacuum pump

seal

SUB CODE: 13 / SUBM DATE: 130ct64 / ORIG REF: 003 / ATD PRESS: 4175

Card 2/2

BULGAKOVA, A.A., ORLENKO, L.P., FEDOTOV, I.D.

Loosening stuck drills without tearing off the pipe. Prikl. geofiz. no.26:253-266 '60. (MIRA 13:8)
(Oil well drilling)

BULGAKOV, Yu.V.

Calculation of sputtering coefficients with allowance for defects in the metal structure caused by an ion beam. Izv. AN SSSR. Ser. fiz. 28 no.9:1474-1477 S '64. (MIRA 17:10)

CA

X

Membranes for equilibrium dialysis. A. M. Bulgakova and I. Ya. Shafershtein (Univ. Kharkov).—*Kolloid. Zhur.* 13, 78-80(1951).—Cellulose membranes prepd. by treating collodion membranes with satd. H_2S soln. in 95% EtOH 6, and 17% aq. NH_3 4 parts, adsorb ions less than collodion or cellophane membranes and are suitable for detg. the binding capacity of proteins for org. ions. Collodion adsorbs bromothymol blue, thymol blue, and bromophenol blue less the greater the pH; only at pH > 9 can a sufficient correction be introduced to take care of this adsorption.

J. J. Bikerman

1951

БУЛГАКОВА, А. М.

The interaction between soluble proteins and thio acids. I. Ya. Shafershtein and A. M. Bulgakova. *Uchenye Zapiski Khar'kov. Univ.* 47, *Trudy Nauch.-Issledovatel. Inst. Khim.* (Khar'kov. Univ.) 10, 153–8(1953); *Referat. Zhur. Khim., Biol. Khim.* 1955, No. 12390.—A method is described for the detn. of the relative adsorbability of sulfonate ions by sol. proteins. The method is based on the fact that sulfo acids lower the rate of sulfophthalein adsorption by proteins, due to the fact that the anions of both substances are adsorbed onto the same structural part of the protein mol., where the positively charged groups prevail. The rate at which the adsorption of sulfophthalein is reduced in the presence of sulfo acids is a measure of the relative adsorbability of these acids to proteins. The adsorbability of sulfo acids can be detd. with the aid of an equilibrium dialysis of a 25% soln. of protein in a phosphate-acetate-borate buffer through a denitrified collodion bag submerged into the same type of buffer soln. contg. either a mixt. of sulfo acids and sulfophthalein or sulfophthalein alone. After 3 days at 15° the outer soln. is adjusted to pH 10 and the concn. of sulfophthalein detd. colorimetrically. A study was made of the adsorbability of 8 aromatic thio acids, benzene, and naphthalene derivs. to proteins including gelatin. Contrary to the prevailing opinion, it was found that the presence in the nucleus of a second thio group in many instances enhances its adsorbability. Supplementary polar substitution and a second benzene ring in the anion also enhance the adsorbability of the thio acids. It is suggested that the method may be of value in the study of the interaction between synthetic anticoagulants (derivs. of aromatic thio acids) and serum protein.

B. S. Levine

111 D

(1)

Bulgakova, A.M.

USSR/Chemistry - Electrodeposition

Card 1/1 Pub. 147 - 10/27

Authors : Gritsan, D.N., and Bulgakova, A.M.

Title : Thermal effect on the cathode during electrodeposition of powdered Cd

Periodical : Zhur. fiz. khim. 28/2, 258-264, Feb 1954

Abstract : It was established that electrodeposition of dispersion Cd deposits is accompanied by the origination of a thermal effect on the cathode. The thermal effect on the cathode can be measured by means of a thermometer with methylated receptacle. The relation between thermal effects, during electrodeposition of powdered Cd and the electrolyte concentration and current density, was established. The origination of the thermal effect is not due to the increase in ohmic resistance in the near-cathode layer of the electrolyte. The introduction of a neutral salt was found to reduce the current density due to which the dispersion residue is formed thus resulting in the thermal effect. Nine USSR references (1941-1952). Table; graphs.

Institution : The A.M. Gorkiy State University, Kharkov

Submitted : April 20, 1953

Bulgakova, A. M.

USSR/ Chemistry - Electrodeposition

Card 1/1 Pub. 147 - 21/27

Authors : Gritsan, D.N.; Bulgakova, A.M.; and Zolotareva, G.A.

Title : Effect of anions on the thermal characteristics of a cathode during electrodeposition of powdered metals

Periodical : Zhur. fiz. khim. 28/2, 337-344, Feb 1954

Abstract : It was established experimentally that the electrodeposition of powdered Cd, Zn and Cu is always accompanied by the origination of a certain thermal effect on the cathode. It was discovered that the magnitude of this thermal effect, for the above mentioned metals, depends upon the nature of the anions of the salts utilized for the electrolysis and that the magnitude increases with the increase in current density. The series of anions, which do affect the thermal effect of anions, are listed. The nature of the cation of the salt, and its effect on the thermal characteristics, are explained. Nine USSR references (1933-1954). Tables; graphs.

Institution : The A.M. Gorkiy State University, Kharkov

Submitted : May 12, 1953

BULGAKOVA, A. M.

BULGAKOVA, A. M. :"The temperature effect on the cathode in the electroprecipitation of powdered metals." Kiev, 1955. Min Higher Education Ukrainian SSR. Kiev State U imeni T. G. Shevchenko. (Dissertation for the Degree of Candidate of Chemical Sciences)

SO: Knizhnaya Letopis': No. 47, 19 November 1955. Moscow.

BULGAKOVA, A.M.

3900

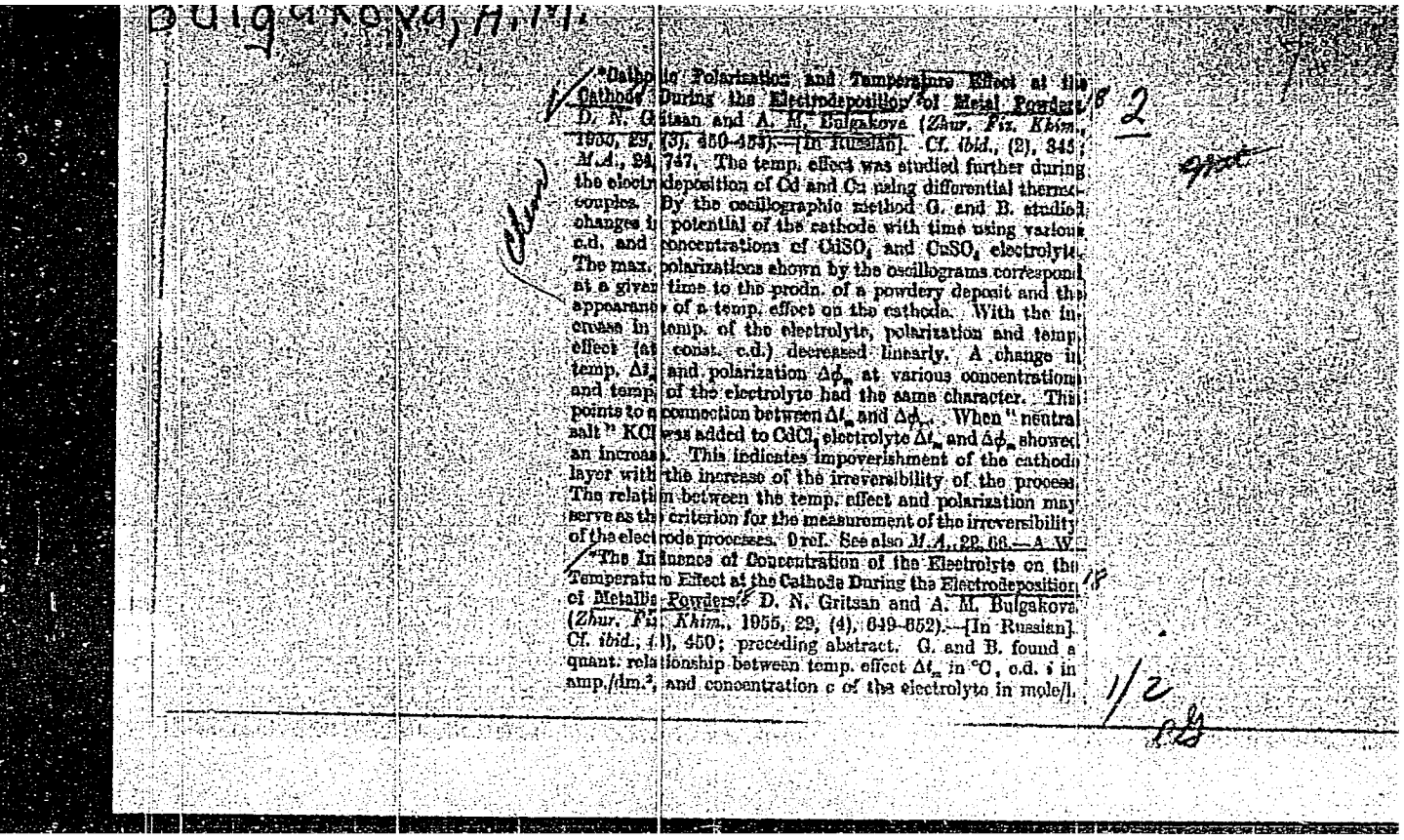
✓Local temperatures at the cathode during electrodeposition of metal powders. D. N. Gritsan and A. M. Bulgakova (*Doklady Akad. Nauk SSSR*, 1955, 100, 1111—1114).—The max. difference, Δt_m, between the temp. of the cathode and of the electrolyte during deposition of Cd powder from 0·011—0·11M-$CdSO_4$ is expressed by $\Delta t_m = \alpha + \beta i$, where α and β are constants, and β depends on $[CdSO_4]$. At constant c.d. $\Delta t_m = ac^b$, where a=0·038i—0·02, and b=—0·46 for Cd; a=0·024i—0·06 and b=—0·51 for Zn; and a=0·034i+0·09 and b=0·09 for Cu. R. TRUSCOE.

CA

(1)

Bulgakova, A. M.

"Use of the Thermopile for Measuring Temperature Effects of the Cathode During the Electrodeposition of Metal Powders," D. N. Gritsan, A. M. Bulgakova, and N. N. Bagrov (*Zhur. Fiz. Khim.*, 1955, 29, (2), 340-349).--[In Russian]. Temp. obtained with thermopiles and thermometers were identical. This indicates the suitability of this method of measurement, and confirms that heat evolution during the electrodeposition of metallic powders is of a local character. The temp. effect is independent of the size of the cathode and, other things being equal, depends only on the c.d. In the quant. detn. of heat evolved on the cathode, values for $CdSO_4$ were obtained for different concentrations of the electrolyte at const. c.d. The advantages of this technique over thermometric methods are: direct reading of the temp. difference, elimination of compensation for the vol. changes of the thermometer bulb, small inertia, high sensitivity, and ability to work with small electrode areas and over wide temp. ranges. Graphs indicate the effects of time of deposition and c.d. on the quantity of heat generated.--A. W.



Bulgakova, N. I.

*Cathode Polarization and Temperature Effect at the Cathode During the Electrodeposition of Metal Powders. D. N. Gritsan and A. M. Bulgakova (*Zhur. Fiz. Khim.*, 1956, 29, (3), 450-455).—[In Russian]. Cf. *ibid.*, (2), 345; *M.A.*, 24, 747. The temp. effect was studied further during deposition of Cd and Cu using differential thermocouples. By the oscillographic method G. and B. studied changes in potential of the cathode with time using various c.d. and concentrations of $CdSO_4$ and $CuSO_4$ electrolyte. The max. polarizations shown by the oscillograms correspond as a given time to the prodn. of a powdery deposit and the appearance of a temp. effect on the cathode. With the increase in temp. of the electrolyte, polarization and temp. effect (at const. c.d.) decreased linearly. A change in temp. Δt_m and polarization $\Delta\phi_m$ at various concentrations and temp. of the electrolyte had the same character. This points to a connection between Δt_m and $\Delta\phi_m$. When "neutral salt" KCl was added to $CdCl_2$ electrolyte Δt_m and $\Delta\phi_m$ showed an increase. This indicates impoverishment of the cathodic layer with the increase of the irreversibility of the process. The relation between the temp. effect and polarization may serve as the criterion for the measurement of the irreversibility of the electrode processes. 9 ref. See also *M.A.*, 22, 66.—A. W.

*The Influence of Concentration of the Electrolyte on the Temperature Effect at the Cathode During the Electrodeposition of Metallic Powders. D. N. Gritsan and A. M. Bulgakova (*Zhur. Fiz. Khim.*, 1955, 29, (4), 649-652).—[In Russian]. Cf. *ibid.*, (1), 450; preceding abstract. G. and B. found a quant. relationship between temp. effect Δt_m in °C, c.d. i in amp./dm.^{2}, and concentration c of the electrolyte in mole/l.

BULGAKOVA, A.M.

USSR.

12144* Influence of the Electrolyte Concentration on the Temperature Effect at the Cathode During the Electrolytic Deposition of Metallic Powders. **Vliianie kontsentratsii elektrolita na temperaturnyi effekt na katode pri elektroosazhdenii metallicheskikh poroshkov.** (Russian.) D. N. Gritsan and A. M. Bulgakova. *Zhurnal Fizicheskoi Khimii*, v. 29, no. 4, Apr. 1955, p. 649-652.

Emperical equations are developed for electrolytic production of Cd, Cu, and Zn powders. Graphs, table. 6 ref.

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BULGAKOVA, A. M.

USSR/ Chemistry - Electrodeposition

Card 1/2 Pub. 22 - 21/47

Authors : Gritsan, D. N.; and Bulgakova, A. M.

Title : Local cathode temperature during electrodeposition of metallic powders

Periodical : Dok. AN SSSR 100/6, 1111-1114, Feb 21, 1955

Abstract : It is shown that the electrodeposition of metallic powders is usually connected with the liberation of heat localized on the surface of the cathode. The liberated heat is characterized by the temperature difference existing between the surface of the cathode and the solution.

Institution : The A. M. Gorkiy State University, Kharkov

Presented by: Academician A. N. Frumkin, July 22, 1954

Periodical : Dok. AN SSSR 100/6, 1111-1114, Feb 21, 1955

Card 2/2 Pub. 22 - 21/47

Abstract : The possibility of applying a differential thermo-battery for measuring the temperature difference, for studying the connection between the temperature difference and cathode polarization and for establishing the quantitave relation between the temperature difference, current density and electrolyte concentration is discussed. Five USSR references (1952-and 1954). Table; graphs.

SOV/137-57-11-21173

Translation from: Referativnyy zhurnal, Metallurgiya, 1957, Nr 11, p 77 (USSR)

AUTHORS: Gritsan, D.N., Bulgakova, A.M., Ovcharenko, N.N.

TITLE: The Oxidizability of Powder Cadmium Produced Electrolytically (Okislyayemost' poroshkoobraznogo kadmiya pri yego poluchenii elektroliticheskim putem)

PERIODICAL: Uch. zap. Khar'kovsk. un-t, 1956, Vol 15, pp 53-58

ABSTRACT: An investigation is made of the degree of oxidation of electrolytic powder Cd in accordance with the conditions of production (current density and bath composition) and of the possibility of reducing the reactivity of the powder by making use of the phenomena of passivation and protection from oxidation with the aid of organic additives at the moment the metal is deposited on the cathode, with simultaneous stabilization of its high degree of dispersion. The investigations are conducted with aqueous solutions of Cd sulfate and nitrate. It is established that the electrolytic Cd powders obtained from these solutions are highly disperse and highly oxidized, particularly if a nitrate bath is used, this being explained by the influence of the NO_3 ion. It is shown that the increase in the degree of

SOV/137-57-11-21173

The Oxidizability of Powder Cadmium Produced Electrolytically

oxidation of Cd powders with rise in current density is fundamentally conditioned by increase in local temperature at the interface between the cathode and the solution. X-rays are used to show that electrical deposition of Cd in the presence of gelatin will yield unoxidized Cd powders.

N.P.

Card 2/2

Булгакова А.М.

GRITSAN, D.N.; SHUM, D.S.; BULGAKOV, B.N.; BULGAKOVA, ...

Oscillographic investigation of cathodic polarization in connection with electrodeposition of metals at high current densities. Uch.zap. KHGU 71:69-75 '56. (MLRA 10:8)

(Electroplating) (Polarization (Electricity))

Bulgakova, A.M.

GRITSAN, D.N.; BULGAKOVA, A.M.

Influence of certain substances added to the electrolyte on the cathode "temperature effect" and polarization during the electrodeposition of powdered cadmium [with summary in English]. Zhur.fiz. khim. 31 no.9:1943-1948 S '57. (MIRA 11:1)

1.Khar'kovskiy gosudarstvennyy universitet im. A.M. Gor'kogo.
(Electroplating) (Cadmium) (Surface-active agents)

Bulgakova, A.M

AUTHORS: Bulgakova, A.M., Volkova, A.M., Klimov, A.P. 32-11-16/60

TITLE: Short Reports (5) (Korotkiye soobshcheniya)

PERIODICAL: Zavodskaya Laboratoriya, 1957, Vol.23, Nr 11, pp. 1308-1308 (USSR)

ABSTRACT: A more rapid method for the determination of the thallium content by measuring of the optical density of iodine thallium quantities, which are stabilized by gelatin, is given in this paper. This method is well applicable with respect to the determination of thallium content in NaJ crystals which were activated by thallium. For this purpose 0.3 g of the crystal are finely pulverized, some drops of the 2% solution of gelatin are added and, while the mixture is vigorously stirred, 50 ml solution of gelatin are also added. The mixture is put into a 100 ml retort and distilled water up to 100 ml of the total volume is added. The content of the retort is stirred carefully, so that no foam forms. Measuring of the optical density of this solution is carried out by means of the photocolorimeter " ϕ 3K-M" with a green filter. For comparison a dose of the 1% solution of the gelatin is used. The experiment takes about 8 to 10 minutes.

Card 1/2

ASSOCIATION: Khar'kov Branch of the Institute for Chemical Reagents (Khar'kovskiy filial instituta khimicheskikh reaktivov)

AVAILABLE: Library of Congress

GRITSAN, D.N.; BULGAKOVA, A.M.

Particle size determination of electrolytic cadmium powder by means of Figurovskii's sedimentation balance. Uch. zap. KHGU 82:69-75 '57. (MIRA 12:9)
(Cadmium) (Sedimentation analysis)

Bulgakova, A. M.

PHASE I BOOK EXPLOITATION SOV/3910

Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov

Veshchestva vysokoy chistoty i reaktivy; sbornik statey (High Purity Substances and Reagents; Collection of Articles) Moscow, Goskhimizdat, 1959. 186 p. (Series: Its: Trudy, vyp. 23) Errata slip inserted. 1,700 copies printed.

Sponsoring Agency: USSR. Sovet Ministrov. Gosudarstvennyy komitet po khimii.

Ed.: Yu.V. Lyande; Tech. Ed.: Ye.G. Shpak; Editorial Board of Series: V.G. Brudz', V.M. Dziomko, R.P. Lastovskiy (Resp. Ed.), A.M. Lukin, O.E. Malkiel', G.I. Mikhaylov, G.A. Pevtsov (Deputy Resp. Ed.), and I.G. Shafran.

PURPOSE: This book is intended for personnel of chemical research and industrial chemical laboratories.

COVERAGE: The book contains 36 articles by affiliates of the Scientific Research Institute for Chemical Reagents (IKhA) treating methods which may be adopted by different branches of industry in producing, analyzing, and studying inorganic and organic substances of high purity. Figures, tables, and references accompany each article. No personalities are mentioned.

Shafran, I.G. Chemical Methods of Determining Small Amounts of Impurities in a Number of High Purity Substances 88

Karancvich, G.G. Colorimetric Determination of Heavy Metals With the Aid of Thioacetamide 96

Bulgakova, A.M., A.M. Volkova, and G.S. Plotnikova. Determining Admixtures of Thallium in Sodium Iodide Single Crystals Activated by Thallium 102

Lukin, A.M., G.B. Zavarikhina, and N.S. Simonova. On the Problem of Analyzing Arylphosphonic Acids 106

Fratkin, Z.G., and N.G. Polivanova. Special Determination of Small Amounts of Iron in Selenium 113

Bozhevol'nov, Ye. A., and G.V. Serebryakova. Some Special Features of the Properties of Salicylaldehyde Semicarbazone as a Luminescent Acid-Base Indicator 116

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Shugam, Ye. A., and L.M. Shkol'nikova. Determination of the Elementary Cell and Space Group of the Sodium Salt of Cobalt (III)-ethylenediaminetetraacetic Acid 166

IV. REVIEWS

Brudz', V.G. Work of the Institute for Chemical Reagents for the [Past] Ten Years 169

AVAILABLE: Library of Congress

Card 6/6

JA/rn/gmp

BULGAKOVA, A.M.; VOLKOVA, A.M.

Extraction-photometric determination of lead traces in high-purity reagents. Zhur. anal. khim. 15 no.5:591-594 S-O '60. (MIRA 13:10)

1. All-Union Scientific Research Institute of Chemical Reagents, Kharkov Branch.

(Lead--Analysis)

BLANK, A.B.; BULGAKOVA, A.M.

Extraction-photometric determination of iron traces with 1-nitroso-2-naphthol. Zhur. anal. khim. 15 no.5:605-609 S-O '60. (MIRA 13:10)

1. All-Union Scientific Research Institute of Chemical Reagents, Kharkov Branch.
(Iron--Analysis) (Naphthol)

BLANK, A.B.; BULGAKOVA, A.M.; SIZONENKO, N.T.

Consecutive extraction-photometric determination of traces of copper, nickel, iron, and manganese. Zhur.anal.khim. 16 no.6:715-719 N-D '61. (MIRA 14:12)

1. All-Union Scientific Research Institute of Monocrystals, Scintillators and Highly Pure Materials, Kharkov.
(Metals—Analysis)

S/137/61/000/012/052/149
A006/A101

AUTHORS: Gritsan, D. N., Bulgakova, A. M.

TITLE: Joint electrolytic deposition of zinc and cadmium in powder form

PERIODICAL: Referativnyy zhurnal. Metallurgiya, no. 12, 1961, 34, abstract 120242 ("Uch. zap. Khar'kovsk. un-t", 1961, 110, Tr. Khim. fak. i N.-i. in-ta khimii KhGU, v. 17, 93 - 96)

TEXT: During electrolytic deposition of Zn-Cd powders from sulfuric-acid salt solutions within the investigated current density range (3 - 7 amp/dm^2), the composition of the deposit changes depending on the electrolyte composition. The decrease observed in the Cd content of the powder was greater in Cd impoverished solutions. The anode composition does not affect the composition of the powder obtained by electrolysis in the case when the relative Cd content in the anode exceeds its relative concentration in the solution. Changes in the duration of electrolysis within 20 - 40 minutes do not affect the composition of deposits containing $\geqslant$ 80% Cd.

G. Svodtseva

[Abstracter's note: Complete translation]

Card 1/1

BLANK, A.B.; SIZONENKO, N.T.; BULGAKOVA, A.M.

Extraction-photometric method for determining the sum of heavy metals by means of sodium diethyldithiocarbamate. Zhur. anal. khim. 18 no.9:1046-1050 S '63. (MIRA 16:11)

1. All-Union Scientific-Research Institute of Monocrystals, Scintillating Materials and Highly Pure Chemical Substances, Khar'kov.

BULGAKOVA, A. M.

The Second All-Union Conference on the Preparation and Analysis of High-Purity Elements, held on 24-28 December 1963 at Gorky State University im. N. I. Lobachevskiy, was sponsored by the Institute of Chemistry of the Gorky State University, the Physicochemical and Technological Department for Inorganic Materials of the Academy of Sciences USSR, and the Gorky Section of the All-Union Chemical Society im. D. I. Mendeleyev. The opening address was made by Academician N. M. Zhavoronkov. Some 90 papers were presented, among them the following:

V. A. Novoselov and T. K. Aydarov. Spectrochemical analysis for S, Se, Te, Sb in InAs.

L. M. Ivantsov. Possibilities of increasing sensitivity of emission spectroscopy.

A. M. Bulgakova, N. P. Zalyubovskaya, and L. S. Manzheliy. A high-sensitivity amperometric method for determining I, Mo, and Tu in LiF, CdS, NaI, CsI, and other single crystals.

(Zhur. Anal. Khim, 19 No. 6, 1964 p. 777-79)

BULGAKOVA, A.M.; ZALYUBOVSKAYA, N.P.

Use of a kinetic method with amperometric recording for the determination of molybdenum and tungsten in cadmium sulfide and lithium fluoride single crystals. Zhur. anal.khim. 18 no.12: 1475-1478 D '63. (MIRA 17:4)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv, Khar'kov.

L 39951-65 EWT(l)/EWT(m)/EPI(n)-2/T/EWP(t)/EEC(b)-2/EWP(b)/EWA(c)
Pi-4/Pu-4 IJP(c) JD/JG/GG

ACCESSION NR: AP4007909 S/0075/63/018/012/1475/1478

AUTHOR: Bulgakova, A. M.; Zalyubovskaya, N. P.

TITLE: Use of the kinetic method with amperometric registration to determine molybdenum and tungsten in cadmium sulfide and lithium fluoride single crystals

SOURCE: Zhurnal analiticheskoy khimii, v. 18, no. 12, 1963, 1475-1478

TOPIC TAGS: semiconductor, single crystal, cadmium sulfide, optical glass, lithium fluoride, trace analysis, molbdenum trace determination, tungsten trace determination, molybdenum separation, tunsten separation, solvent extraction, catalytic iodide oxidation, molybdenum catalyst, tungsten catalyst, alkali halide, molbdenum extraction, tungsten extraction

ABSTRACT: The experiment designed to determine the traces of molybdenum and tungsten in cadmium sulfide and lithium fluoride single crystals involved use of the method developed by W. Jedrzejewski (Analytical chemistry, 13, 112,

Card 1/3

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1958) whereby even a slight change in the iodide-iodine concentration ratio in the reaction medium can be recorded amperometrically with the use of two platinum indicator electrodes. The least probable error in determining molybdenum traces is by use of the amperometric method under constant temperature conditions. The advantage of such a method, in addition to its only requiring simple instruments, is the possibility of maintaining a constant temperature and measuring the reaction rate 15-30 seconds after the solutions have been mixed. The relationship between the reaction rate t_{ga} and catalyzer C concentration was determined for each of the ions and their mixtures in various ratios from the above-mentioned standard solutions of ammonium molybdate and sodium tungstate. According to the equations cited below, this relationship is practically the same in all three cases, and is characterized by the additivity of the molybdenum and tungsten catalytic action:

$$tga_1 = 0.14\ C_{Mo} + 0.34$$
$$tga_2 = 0.11\ C_{W} + 0.39$$
$$tga_3 = 0.12\ C_{(Mo + W)} + 0.34$$